



U.S. Department of Energy
Office of River Protection

**P.O. Box 450
Richland, Washington 99352**

02-OSR-0268

Mr. Ron F. Naventi, Project Manager
Bechtel National, Inc.
3000 George Washington Way
Richland, Washington 99352

Dear Mr. Naventi:

CONTRACT NO. DE-AC27-01RV14136 – QUESTIONS ON AUTHORIZATION BASIS CHANGE
NOTICE 24590-WTP-ABCN-ESH-02-015, REVISION 0

Reference: BNI letter from A.R. Veirup to M.K. Barrett, ORP, "Transmitted for Approval:
Authorization Basis Change Notices, 24590-WTP-ABCN-ESH-02-002, Revision 0;
24590-WTP-ABCN-ESH-02-010, Revision 0; 24590-WTP-ABCN-ESH-02-013,
Revision 0; 24590-WTP-ABCN-ESH-02-015, Revision 0," CCN: 029186, dated May 1,
2002.

This letter transmits the Office of Safety Regulation (OSR) questions and requests for information (Attachment) to support the review of the Bechtel National, Inc. (BNI) Authorization Basis Change Notice, 24590-WTP-ABCN-ESH-02-015, Revision 0. An electronic file is included for your use.

The OSR intends to promptly review your responses to the attachment when received. A prompt response will enable the review schedule to be maintained. Please direct any questions to Walt Pasciak, (509) 373-9189.

Nothing in this letter should be construed as changing the Contract, DE-AC27-01RV14136. If, in my capacity as the Safety Regulation Official, I provide any direction that your company believes exceeds my authority or constitutes a change to the Contract, you will immediately notify the Contracting Officer and request clarification prior to complying with the direction.

Sincerely,

Robert C. Barr
Safety Regulation Official
Office of Safety Regulation

OSR:WJP

Attachment

Questions for Authorization Basis Change Notice
24590-WTP-ABCN-ESH-02-015

Question Numbers

ABCN-ESH-01-015-01
ABCN-ESH-01-015-02

Office of Safety Regulation	OSR Review Team Questions for BNI
Question # (assigned by ATL): ABCN-ESH-02-015-01	Date Opened: June 7, 2002
Place “X” if answering “yes”: Limited Rights Information? ____ Team Accepted? ____	Date to Contractor:
	Date of Response:
	Date Closed:
	Reviewer:
Cited Reference: DOE/RL-96-0006, Rev. 2: <ul style="list-style-type: none"> ➤ Item 4.2.4.1, Support Facilities, “The facility design should provide additional capability to place and maintain the facility in a safe state following an accident if the normal control areas are expected to become uninhabitable.” ➤ Item 4.2.6.2, Instrumentation and Control Design, “Sufficient instrumentation and control capability should be provided so that under normal operating and postulated accident conditions the operators can diagnose facility conditions, place and maintain the facility in a safe state, and mitigate accidents. If necessary, measures should be provided to protect the operator in the performance of these functions.” 24590-WTP-SRD-ESH-01-001-02, River Protection Project – Waste Treatment Plant Safety Requirements Document, Volume II, Rev. 1a: <ul style="list-style-type: none"> ➤ Safety Criterion (SC) 4.3-7, “The control room or control area shall be designed to permit occupancy and actions to be taken to monitor the facility safely during normal operations, and to provide safe control of the facility for anticipated operational occurrences and accident conditions. If credit is taken for operator action to satisfy the accident exposure standards of Safety Criteria 2.0-1 and/or 2.0-2, adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE), 30 rem thyroid, and 30 rem beta skin for the duration of the accident. For occurrences and accidents involving chemical release, provisions shall be made such that the operator exposure does not exceed the worker exposure standards of 29 CFR 1910.120 for emergency exposure. <p>Consideration shall also be given to accidents at nearby facilities if operator action is required to safely control the processes and bring them to a safe state. The need for an alternate system that would allow the processes to be placed in a safe state in the event the primary control area is uninhabitable shall be evaluated.”</p> <ul style="list-style-type: none"> ➤ Safety Criterion (SC) 4.3-7 required NUREG-0800, “Standard Review Plan, Section 6.4, Section II, Items 1-5” as an implementing code and standard. 	

CCN: 030609, Attachment 7, Pretreatment Preliminary Safety Analysis Report (PT PSAR) submittal, 24590-WTP-PSAR-ESH-01-002-01, "Preliminary Safety Analysis Report to Support Construction Authorization; General Information":

- Section ES.2.2, "A two-story annex building adjacent to and south of the PT building houses the WTP main control room, ITS compressors, and various areas for support activities. The secondary, or standby, control room is in the PT building proper."
- Section ES.2.3, "The facility annexes include...the LAW facility control room on the north."

CCN: 027638, Attachment 6, HLW PSAR Specific Information, Volume IV, 24590-WTP-PSAR-ESH-01-002-04, Rev. H, "Preliminary Safety Analysis Report to Support Construction Authorization; HLW Facility Specific Information:"

- Section 2.4.13.3, "HLW Facility Annex" 11 ft Area references the HLW facility control room.
- Section 2.4.14.11, "HLW Facility Annex," 30 ft elevation references the HLW standby control room.

Cited Submittal Text: For SC 4.3-7, 24590-WTP-ABCN-ESH-02-015, Rev. 0 proposed tailoring portions of NUREG-0800.

- Attachment 2, Page 1 of 5, Appendix C: Implementing Standards, Page 6.4-4, Item 1, justification 2, "Since the MCR is currently the only control room which is required to remain manned..."
- Attachment 2, Page 2 of 5, Appendix C: Implementing Standards, Page 6.4-4, Item 2 Ventilation System Criteria, "In the first sentence insert 'MCR' between the words 'The' and 'ventilation'."
- Attachment 2, Page 2 of 5, Appendix C: Implementing Standards, Page 6.4-4, Item 2 Ventilation System Criteria, Justification 1, "Since the MCR is currently the only control room for which a standby ventilation system is planned..."

Questions: Why is the application of Safety Criterion 4.3-7 to only one control room, by introducing the concept of MCR, not a reduction in commitment?

Explanation/Discussion (Optional): Master Control Room (MCR) is not a term used or defined in the SRD. SRD Safety Criteria 4.307 applies to all control rooms or control areas. SRD SC 4.3-7 identifies standards for control rooms or areas and to maintain habitability during normal operations and to provide safe control of the facility for anticipated operational occurrences and accident conditions. SC 4.3-7 references NUREG-0800 as an implementing standard for control room habitability. As indicated in the recent PSAR submittals, (including PT PSAR, Sections 2.2 and 2.3), control rooms are planned for the Low Activity Waste (LAW) facility, High Level Waste (HLW) facility, and Pretreatment (PT) facility with a standby control room in the PT building proper. The Contractor has tailored NUREG-0800 to only apply to the MCR and has not provided an explanation as to why SC 4.3-7 does not apply to other control rooms (HLW, LAW, and standby control room at PT facility). This is inconsistent with the SRD because the SRD does not recognize the concept of MCR and the SRD requires that habitability be maintained for all control rooms or areas. If BNI intends to have only one control room that meets the requirements of Safety Criteria 4.3-7, which does not provide control for the entire facility, that approach needs to be justified in the PSAR submittals, rather than by making a change to the SRD Implementing Codes and Standards. BNI will have to demonstrate in the submittals that the Safety Criteria is not applicable for those cases where habitability is not

maintained for control rooms or areas. If the approach is ultimately approved in the PSAR review process, the SRD can be changed at a later date to reflect the approved design.

Contractor Response:

Disposition:

Office of Safety Regulation	OSR Review Team Questions for BNI
Question # (assigned by ATL): ABCN-ESH-02-015-02	Date Opened: June 7, 2002
Place “X” if answering “yes”: Limited Rights Information? ____ Team Accepted? ____	Date to Contractor:
	Date of Response:
	Date Closed:
	Reviewer:
Cited Reference: DOE/RL-96-0006, Rev. 2, Item 4.2.4.1, Support Facilities The facility design should provide additional capability to place and maintain the facility in a safe state following an accident if the normal control areas are expected to become uninhabitable. DOE/RL-96-0006, Rev. 2, Item 4.2.6.2, Instrumentation and Control Design Sufficient instrumentation and control capability should be provided so that under normal operating and postulated accident conditions the operators can diagnose facility conditions, place and maintain the facility in a safe state, and mitigate accidents. If necessary, measures should be provided to protect the operator in the performance of these functions. 24590-WTP-SRD-ESH-01-001-02, River Protection Project – Waste Treatment Plant Safety Requirements Document, Volume II, Rev. 1a, Safety Criterion (SC) 4.3-7 required NUREG-0800, “Standard Review Plan, Section 6.4, Section II, Items 1-5” as an implementing code and standard.	

Cited Submittal Text: For SC 4.3-7, 24590-WTP-ABCN-ESH-02-015, Rev. 0 proposed tailoring portions of NUREG-0800.

- a) Attachment 2, Page 2 of 5, Appendix C: Implementing Standards, Page 6.4-4, Item 2 Ventilation System Criteria, after Justification 1, "...and replace the acronym 'SAR' with 'FSAR'."
- b) Attachment 2, Page 2 of 5, Appendix C: Implementing Standards, Pages 6.4-4 through 6.4-5, Item 3 Pressurized Systems, Justification 3, "The frequency of the periodic verification will be determined as part of the SAR process."
- c) Two references:
 - Attachment 2, Page 3 of 5, Appendix C: Implementing Standards, Pages 6.4-5, Item 4, Emergency Standby Atmospheric Filtration System, after Justification 2, "In the fourth sentence add the words 'The evaluation of' [emphasis added] at the beginning of the sentence..."
 - Attachment 2, Page 4 of 5, Appendix C: Implementing Standards, Pages 6.4-5, Item 5, Relative Location of Source and Control Room, after Justification 1, "In Item 5.b, second sentence, replace the words 'The acceptance criteria' [emphasis added] for the' with 'The evaluation of' [emphasis added]..."

Questions:

- a) What is the reason for not providing isolation damper leak tightness information in the PSAR?
- b) What is the basis for not performing the periodic verification every 18 months as is required by NUREG-0800?
- c) How will the Contractor ensure that protection of the control room personnel from releases of hazardous chemicals is consistent with the SRD SC 4.3-7 exposure thresholds. SRD SC 4.3-7 cites 29 CFR 1910.120 for emergency exposure thresholds for workers.

Explanation/Discussion (Optional):

- a) NUREG-0800 states that "isolation dampers used to isolate the control zone from adjacent zones or the outside shall be leak tight....The degree of leak tightness should be documented in the SAR." NUREG-0800 does not clarify whether this criterion applies at the PSAR or FSAR stage; the Contractor has not provided justification as to why the degree of leak tightness is not to be in the PSAR. The proposed change would require isolation damper leak tightness information to be provided in the FSAR rather than in the PSAR.
- b) The proposed change states that the frequency of periodic verification will be determined as part of the SAR process, rather than at the 18 month frequency suggested in NUREG-0800.
- c) NUREG-0800 specified that protection of control room personnel from releases of chlorine or other toxic gases was to be consistent with the methodologies and acceptance criteria in the referenced Regulatory Guides. The proposed changes only specify that the evaluation of protection of control room personnel shall be consistent with the methodologies in the

referenced Regulatory Guides. It is not clear from the revised wording that after performing the evaluation, the Contractor will ensure protection of control room personnel is consistent with 29 CFR 1910.120 emergency exposure thresholds. An acceptable approach to the question would be a statement that the results of the evaluations will be used to assure the protection of the control room workers.

Contractor Response:

Disposition: